# UNITED STATES PATENT AND TRADEMARK OFFICE

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/711,192 | 08/31/2004 | Ira Liao | VIAP0129USA | 5191 |

| | | | EXAMINER |
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| 27765 | 7590 | 05/12/2006 | AMIN, JWALANT B |

NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION
P.O. BOX 506
MERRIFIELD, VA 22116

| ART UNIT | PAPER NUMBER |
|---|---|
| 2628 | |

DATE MAILED: 05/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

| | Application No. | Applicant(s) |
|---|---|---|
| **Office Action Summary** | 10/711,192 | LIAO ET AL. |
| | Examiner | Art Unit | |
| | Jwalant Amin | 2628 | |

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
 Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *31 August 2004*.

2a)☐ This action is **FINAL**.     2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-8* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 August 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some * c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
     Paper No(s)/Mail Date 4-24-06, 4-20-06

4) ☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

# DETAILED ACTION

## *Drawings*

1.     The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5)

because they include the following reference character(s) not mentioned in the

description: Element number 234 and 244 as shown in Fig. 2 are not described in the

specification.  Corrected drawing sheets in compliance with 37 CFR 1.121(d), or

amendment to the specification to add the reference character(s) in the description in

compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid

abandonment of the application. Any amended replacement drawing sheet should

include all of the figures appearing on the immediate prior version of the sheet, even if

only one figure is being amended. Each drawing sheet submitted after the filing date of

an application must be labeled in the top margin as either "Replacement Sheet" or "New

Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next

Office action. The objection to the drawings will not be held in abeyance.

## *Claim Rejections - 35 USC § 103*

2.     The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

3.      Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Ehlers (US Pub. No. 2003/0206180; hereinafter referred to as Ehlers) in view of

MacInnis et al (US Patent No. 6,573,905; hereinafter referred to as MacInnis).

4.      Regarding claim 1, Ehlers teaches a connection device capable of mixing a red-

green-blue (RGB) graphics signal and a luminance-bandwidth-chrominance (YUV)

video signal (Fig. 3, [0006] lines 1-4, [0025], [0027]; system for combining inputs

corresponds to a connection device capable of mixing; combining corresponds to

mixing; graphics source/generative graphics data in RGB color space corresponds RGB

graphics signal; video source/live video data in YCbCr color space corresponds to YUV

video signal) comprising a graphics transforming module for transforming the RGB

graphics signal into a YUV graphics signal (Fig. 3, [0023] lines 4-7, [0027], [0034];

generative graphics input/globe corresponds to RGB graphics signal; color space

converter 104 corresponds to graphics transforming module; RGB color of the globe ...

converted to YCbCr corresponds to transforming the RGB graphics signal into a YUV

graphics signal); and a mixing module connected to the graphics transforming module

for receiving the YUV video signal and the YUV graphics signal from the graphics

transforming module, the mixing module outputting a YUV signal after mixing the YUV

video signal and the YUV graphics signal (Fig. 3, [0023], [0036], [0038]; incoming video

corresponds to YUV video signal; 3D graphics input/globe converted to YCbCr

corresponds to YUV graphics signal; color blender 100 corresponds to mixing module;

final image corresponds to output signal after mixing the graphics and video signal; final

image will be recorded ... that requires YCbCr corresponds to outputting YUV signal).

Ehlers discloses all of the claimed limitations as stated above, except that the

input video signal, output signal and the converted graphics signal are in YUV format,

and not in YCbCr format. However, MacInnis teaches that the YUV format may also be

referred to as YCrCb format (col. 5 lines 61-63; the YUV format may ... equivalent to U

and V corresponds to YUV format is similar to (closely associated with) YCrCb format).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of

present invention to refer the YCrCb format as YUV format as taught by MacInnis and

use it into the system of Ehlers to represent video signal and the corresponding output

signal because YCrCb format is very similar to YUV format and so any algorithm

applied to YUV format could also be applied to YCrCb format.

5.      Regarding claim 2, Ehlers teaches the first switching module including a first

output for outputting the RGB graphics signal to the graphics transforming module (Fig.

3; 3D Graphics 102 corresponds to graphics signal; Color Space Converter 104

corresponds to graphics transforming module; In Fig. 3, 3D Graphics data (signal) 102

is an input to the Color Space Converter 104 which corresponds to inputting the RGB

graphics signal to the graphics transforming module); and a second output for outputting

the RGB graphics signal to the mixing module (Fig. 3; Color Blender 100 corresponds to

mixing module; In Fig. 3, 3D graphics data (signal) is an input to MUX 106 which selects

original 3D graphics data or the converted 3D graphics data and passes it to the Color

Blender 100 corresponds to outputting the RGB graphics signal to the mixing module); a

video transforming module connected to the mixing module for transforming the YUV

video signal into an RGB video signal (Fig. 3, [0021], [0023], [0031]; Color Space

Converter 110 corresponds to video transforming module; Color blender 100

corresponds to mixing module; incoming video signal 108/the satellite video of the

hurricane corresponds to YUV video signal; a current practice is ... combination of

video and generative graphics corresponds to storing the output from the mixing module

into RGB format data which further corresponds to transforming the YCbCr (YUV) video

signal data into the RGB format; an incoming video signal 108 is also converted through

its own color space converter 110/the satellite video ... converted if necessary

corresponds to transforming the YUV video signal into an RGB video signal); a second

switching module including a first output for outputting the YUV video signal or the video

transforming module (Fig. 3; incoming video 108 corresponds to YUV video signal;

Color Space Converter 110 corresponds to video transforming module; In Fig. 3, 3D

incoming video (signal) 108 is an input to the Color Space Converter 110 which

corresponds to inputting the YUV incoming video signal to the video transforming

module); and a second output for outputting the YUV video signal to the mixing module

(Fig. 3; Color Blender 100 corresponds to mixing module; In Fig. 3, incoming video

(signal) 108 is an input to MUX 112 which selects original incoming video signal or the

converted video signal and passes it to the Color Blender 100 corresponds to outputting

the YUV video signal to the mixing module); and wherein the mixing module is capable

of receiving the RGB graphics signal and the RGB video signal, and outputting an RGB

signal after mixing the RGB graphics signal and the RGB video signal (Fig. 3, [0021],

[0023], [0038]; an incoming video ... passes through a MUX 112 means that the MUX

112 will be able to select the converted RGB video signal or the original incoming video

signal and pass it to the color blender 100 which further corresponds to the mixing

module is capable of receiving the RGB video signal; a generative graphics input ... if

the input is already in the proper format means that the MUX 106 will be able to select

the original RGB graphics data (signal) and pass it to the color blender 100 which

further corresponds to the mixing module is capable of receiving the RGB graphics

signal; all input signals are processed ... only one format to be stored means that since

the color blender receives the graphics signal and the video signal in the RGB format,

the blended output signal will also in the same format corresponds to outputting an RGB

signal after mixing the RGB graphics signal and the RGB video signal).

Ehlers discloses all of the claimed limitations as stated above, except that the

connection device comprises of a first switching module and a second switching

module, each having a first output and a second output. However, the examiner takes

an official notice of the fact that it is common to use a switch with two outputs, and to

select either one of the two outputs based on a control signal. Therefore, it would have

been obvious to one of ordinary skill in the art at the time of present invention to modify

the system of Ehlers and use a first switching module and a second switching module to

output the 3D graphics signal and the incoming video signal to either directly to the

MUX or after passing through the Color Space Converter because by adding the

switching modules will reduce the processing time for converting the RGB graphics

signal into YUV graphics signal or for converting the YUV video signal into RGB video

signal by controlling the output of the switching module.

Ehlers further discloses that a MUX can select between converting and not converting the input and that depending on the output device, a color space conversion is performed on the final image ([0023], [0038]; MUX can select between converting and not converting the input/if the image is going to be ... sent to the computer monitor means that there is a way of determining the output device and a control signal is used to select the output from the MUX; the same control signal could be also used to select the one of the two outputs from the switching modules). Although Ehlers teaches all of the claimed limitations as stated above, he does not explicitly state that a basic input-output (BIOS) is used for selecting one of the two outputs of the first switching module to output the RGB graphics signal and for selecting one of the two outputs of the second switching module to output the YUV video signal. However, the examiner takes an official notice of the fact that it is common to use bios to determine the type of output device when a computer is powered on or booted up. Therefore, it would have been obvious for one of ordinary skill in the art at the time of the present invention to use bios into the system of Ehlers to identify the type of output device and based on the type of the output device provide a control signal to select one of the two outputs of the switching modules because bios is used to recognize and control various devices that make up the computer.

6.      Regarding claim 3, Ehlers discloses that depending on the output device, a color space conversion is performed on the final image ([0038]; if the image is going to be ... sent to the computer monitor means that there is a way of determining the output device

and a control signal is used to select the output from the MUX; the same control signal

could be also used to select the one of the two outputs from the switching modules)

Ehlers discloses all of the claimed limitations as stated above, except that the

BIOS controls the outputs of the first and second switching modules based on an output

interface connected to the mixing module. However, the examiner takes an official

notice of the fact that it is common to use bios to determine the type of output device

when a computer is powered on or booted up. Therefore, it would have been obvious

for one of ordinary skill in the art at the time of the present invention to use bios into the

system of Ehlers to identify the type of output device and based on the type of the

output device provide a control signal to select one of the two outputs of the switching

modules because bios is used to recognize and control various devices that make up

the computer.

7.      Regarding claim 4, Ehlers discloses the connection device wherein the output

interface is a TV output interface ([0020]; output data to the appropriate device

corresponds to output interface; TV monitor corresponds to TV output interface).

8.      Regarding claims 5, 6 and 7, Ehlers does not disclose that the output interface is

a LCD output interface, a CRT output interface or a PDP output interface. However,

Ehlers does disclose that the final image could be sent to a computer monitor ([0020],

[0038]). The examiner takes an official notice of the fact that computer monitors are

available as CRT displays, LCD displays and PDP displays. Therefore, it would have

been obvious to one of ordinary skill in the art at the time of present invention to use a

CRT display as an output interface into the system of Ehlers to display the output image

because CRT monitors are very cheap and easily available. It would have been obvious

to one of ordinary skill in the art at the time of present invention to use a LCD monitor as

an output interface into the system of Ehlers because LCD monitors are lightweight and

consumes lower power. It would have been obvious to one of ordinary skill in the art at

the time of present invention to use a PDP display as an output interface into the

system of Ehlers because PDP displays give higher resolution.

9.      Regarding claim 8, Ehlers discloses a method for mixing an RGB graphics signal

and a YUV video signal (Fig. 3, [0006] lines 1-4, [0025], [0027]; method for combining

inputs corresponds to method for mixing; combining corresponds to mixing; graphics

source/generative graphics data in RGB color space corresponds RGB graphics signal;

video source/live video data in YCbCr color space corresponds to YUV video signal)

comprising transforming the RGB graphics signal into a YUV graphics signal, and

mixing the YUV graphics signal and the YUV video signal of the second switching

module for generating the YUV signal (Fig. 3, [0023], [0027], [0034], [0036], [0038];

generative graphics input/globe corresponds to RGB graphics signal; color space

converter 104 corresponds to graphics transforming module; RGB color of the globe ...

converted to YCbCr corresponds to transforming the RGB graphics signal into a YUV

graphics signal; incoming video corresponds to YUV video signal; color blender 100

corresponds to mixing module; final image corresponds to output signal after mixing the

graphics and video signal; final image will be recorded ... that requires YCbCr

corresponds to generating the YUV signal); and transforming the YUV video signal into

an RGB video signal, and mixing the RGB video signal and the RGB graphics signal of

the first switching module for generating the RGB signal (Fig. 3, [0021], [0023], [0031], [0038]; Color Space Converter 110 corresponds to video transforming module; Color blender 100 corresponds to mixing module; incoming video signal 108/the satellite video of the hurricane corresponds to YUV video signal; a current practice is ... combination of video and generative graphics corresponds to storing the output from the mixing module into RGB format data which further corresponds to transforming the YCbCr (YUV) video signal data into the RGB format; an incoming video signal 108 is also converted through its own color space converter 110/the satellite video ... converted if necessary corresponds to transforming the YUV video signal into an RGB video signal; an incoming video ... passes through a MUX 112 means that the MUX 112 will be able to select the converted RGB video signal or the original incoming video signal and pass it to the color blender 100 which further corresponds to the mixing module is capable of receiving the RGB video signal; a generative graphics input ... if the input is already in the proper format means that the MUX 106 will be able to select the original RGB graphics data (signal) and pass it to the color blender 100 which further corresponds to the mixing module is capable of receiving the RGB graphics signal; all input signals are processed ... only one format to be stored means that since the color blender receives the graphics signal and the video signal in the RGB format, the blended output signal will also in the same format corresponds to generating an RGB signal after mixing the RGB graphics signal and the RGB video signal).

Ehlers discloses all of the claimed limitations as stated above, except that the method comprises of a first switching module and a second switching module and a

control signal is utilized for selecting one of the two outputs of the switching modules. However, the examiner takes an official notice of the fact that it is common to use a switch with two outputs, and to select either one of the two outputs based on a control signal. Ehlers further discloses that a MUX can select between converting and not converting the input and that depending on the output device, a color space conversion is performed on the final image ([0023], [0038]; MUX can select between converting and not converting the input/if the image is going to be ... sent to the computer monitor means that there is a way of detecting the output device and based on the output device a control signal is used to select the output from the MUX; since this control signal controls the inputs to the color blender from the MUX, it also controls the outputs of the first and second switching modules, and thus the same control signal could be also used to select the one of the two outputs from the switching modules). Therefore, it would have been obvious to one of ordinary skill in the art at the time of present invention to modify the system of Ehlers and use a first switching module for inputting the RGB graphics signal and a second switching module for inputting a YUV video signal to output the 3D graphics signal and the incoming video signal to either directly to the MUX or after passing through the Color Space Converter because by adding the switching modules will reduce the processing time for converting the RGB graphics signal into YUV graphics signal or for converting the YUV video signal into RGB video signal by controlling the output of the switching module.

Ehlers discloses all of the claimed limitations as stated above, except that the BIOS detects an output interface and sends a control signal to the switching module.

However, the examiner takes an official notice of the fact that it is common to use bios to determine the type of output device when a computer is powered on or booted up. Therefore, it would have been obvious for one of ordinary skill in the art at the time of the present invention to use bios into the system of Ehlers to identify the type of output device and based on the type of the output device provide a control signal to select one of the two outputs of the switching modules because bios is used to recognize and control various devices that make up the computer.

Ehlers discloses all of the claimed limitations as stated above, except that the input video signal, output signal and the converted graphics signal are in YUV format, and not in YCbCr format. However, MacInnis teaches that the YUV format may also be referred to as YCrCb format (col. 5 lines 61-63; the YUV format may ... equivalent to U and V corresponds to YUV format is similar to (closely associated with) YCrCb format). Therefore, it would have been obvious to one of ordinary skill in the art at the time of present invention to refer the YCrCb format as YUV format as taught by MacInnis and use it into the system of Ehlers to represent video signal and the corresponding output signal because YCrCb format is very similar to YUV format and so any algorithm applied to YUV format could also be applied to YCrCb format.

10.    Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jwalant Amin whose telephone number is 571-272-2455. The examiner can normally be reached on Monday - Friday 9:30 a.m. - 6:00 p.m.:

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Mark Zimmerman can be reached on 571-272-7653. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

J. A.
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MARK ZIMMERMAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600